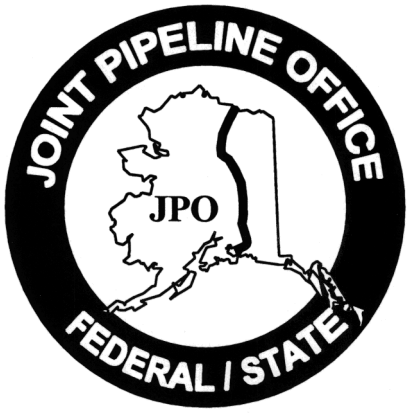

JOINT PIPELINE OFFICE

Comprehensive Monitoring Program Report

Alyeska Pipeline Service Company's TAPS Environmental Protection Program

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Message To Stakeholders

Importance of TAPS

The Trans-Alaska Pipeline System (TAPS) transports nearly 20 percent of the nation's domestically produced crude oil through the unique and fragile environment of Alaska. TAPS is critical to the national security and revenues from crude oil transported by TAPS account for approximately 85 percent of the State of Alaska's general fund. Since start-up in 1977, TAPS has safely transported over 12 billion barrels of crude oil from Prudhoe Bay to Valdez. The Joint Pipeline Office (JPO), a consortium of six State and five Federal agencies, oversees Alyeska's management of TAPS.

JPO's Comprehensive Monitoring Program

The JPO Comprehensive Monitoring Program (CMP) is intended to influence continual improvement in Alyeska's management of TAPS construction, operations and maintenance activities while assuring that the environment, public safety and pipeline integrity are protected. The JPO vision is: ***"To work proactively with the oil and gas industry in Alaska to achieve safe operation, environmental protection, and continued transportation of oil and gas in compliance with legal requirements."*** The JPO CMP process is focused on problem prevention rather than emergency response and damage control.

CMP Reports periodically communicate to JPO stakeholders summaries of past significant findings, conclusions and recommendations drawn from JPO monitoring efforts. They revisit critical TAPS audit deficiencies; incorporate concerns raised by TAPS employees and outside interest groups; address high risk activities; verify compliance with laws, regulations, permit conditions, and grant/lease stipulations; verify compliance with important internal Alyeska controls such as the quality, safety and environmental programs; and evaluate causal factors and trends related to recent TAPS incidents. Each report covers one of twelve CMP functional topics and addresses a selection of significant issues of concern to JPO and its stakeholders. The twelve CMP functional areas are:

-Environment	-Project Design	-Configuration Management
-Risk Management	-Maintenance	-Employee Concerns Program
-Project Performance	-Operations	-Equal Employment Opportunity
-Safety	-Quality	-Native Employment and Training

About This Report

The JPO is pleased to present this report on ***Alyeska Pipeline Service Company's TAPS Environmental Protection Program*** to our stakeholders. There is significant potential for direct, indirect and cumulative impacts to the environment from TAPS operations. While TAPS operations will never be risk-free, JPO oversight will help minimize that risk and improve Alyeska's environmental performance.

Bill Britt
State Pipeline Coordinator

Jerry Brossia
Authorized Officer

Executive Summary

The Joint Pipeline Office (JPO) evaluated existing surveillance, assessment and audit data to determine the status of Alyeska's TAPS Environmental Protection Program. JPO makes the following conclusions about Alyeska's environmental performance:

- **Alyeska is in compliance with environmental stipulations of the grant and lease** based on 1997 performance.

- **Alyeska is in compliance with most environmental laws and regulations**. Several non-compliance issues identified by agencies were unresolved during the period covered by this report.

- **Alyeska has implemented an adequate oil spill prevention, preparedness and response program.** Maintaining an adequate program while making organizational and operational changes in the company will require continued diligence by both JPO and Alyeska. Alyeska has submitted a revised oil discharge prevention and contingency plan (C-plan) which will be reviewed by JPO to ensure response capability and oil spill prevention.

- **Corrective and preventive actions** resulting from past audit findings related to the TAPS Environmental Protection Program **are in place and effective**.

- JPO and Alyeska **employee concern programs have benefitted TAPS environmental protection**. Approximately 12.5% of the environmental concerns were validated by JPO or Alyeska and resulted in corrective action by Alyeska.

- The **effectiveness of Alyeska's environmental policy**, which communicates the corporate commitment to environmental protection to all Alyeska employees and contractors **could be increased** by clearly stating it in a high level document signed by Alyeska's top management.

- **Alyeska has implemented an effective program of environmental audits and environmental surveillances.** However, opportunities for improvement exist.

- Alyeska conducted **major maintenance projects** in a manner that **minimized risk to the environment**.

In addition, the JPO has documented **concerns related to the potential for increased risk to the environment posed by Alyeska's recent reorganization**. JPO cannot yet determine if potential risks are occurring because Alyeska is still in transition to the new organization. JPO plans to assess if consequences or events associated with potential risks actually occur after Alyeska's new organization is in place in mid-1998. In 1998, **JPO will continue to oversee Alyeska's TAPS environmental protection program,** including compliance with environmental stipulations of the grant and lease.

Chapter 1. Purpose, Background and Scope

Purpose of This Report

This report presents the results of a Joint Pipeline Office (JPO) review of Alyeska Pipeline Service Company's environmental performance, based on significant findings, conclusions and recommendations drawn from recent JPO oversight and monitoring efforts. This review of Alyeska's environmental performance is not all inclusive. Rather, it evaluates Alyeska's environmental performance relative to some significant TAPS environmental issues which are of potentially high risk to the environment.

The JPO believes that sound environmental performance must go beyond simple compliance with laws and regulations. To be effective, environmental protection must be accomplished within a structured management system integrated with overall management of TAPS. This structured management system is embodied in the Alyeska Integrity Management System (AIMS) and the quality, safety, and environmental protection programs. The success of a sound environmental protection program depends on commitment from all levels and functions in Alyeska, particularly from top management. A program of this kind will enable Alyeska to establish an environmental policy and objectives to achieve that policy. It will allow Alyeska to assess the effectiveness of its environmental efforts to achieve environmental protection and to demonstrate that achievement to others. The overall aim of a sound environmental program should be to support environmental protection and prevention of damage to the environment in balance with technical capabilities and economic needs.

Environmental Protection on TAPS

Protection of the environment has been one of the primary focuses of the State and Federal governments since oil was discovered on the North Slope in 1968. The Federal Agreement and Grant of Right-of-Way and the State Right-of-Way Lease contain similar principles applicable to protection of the environment[1]. Beginning with the design and construction phases of TAPS, and continuing through the operation and maintenance phases, government agencies have tried to assure that Alyeska employed all practicable means and measures (the best technology available) to preserve and protect the environment. The goal of both Federal and State governments has been to protect environmental values and amenities within the bounds of economic practicalities and technical capabilities in a manner consistent with State and Federal laws and policies. Since 1990, JPO has conducted oversight and monitoring of TAPS design, construction, operations, and

[1]The Federal Agreement and Grant of Right-of-Way and the State Right-of-Way Lease contain intent language in the form of guiding principles (the language is very similar but not identical). To quote the State lease: "... In the construction..., operation, maintenance..., and termination of the Pipeline, Lessees shall employ the best practicable technology available and use all practicable means and measures to preserve and protect the environment..."

maintenance activities to assure protection of the environment and compliance with environmental laws and regulations.

Scope

Subject areas included in this report were selected because they are of importance to stakeholders and JPO management. The period covered by this CMP Report is from January 1995 through December 1997. Future CMP Reports on Alyeska's environmental protection program will evaluate other areas or will reevaluate previously covered areas to determine if improvements have been made.

This CMP Report on Alyeska's environmental protection program is supported by recent JPO surveillances and assessments. It includes consideration of: past audit deficiencies; employee concerns; Alyeska environmental audit, environmental surveillance, and quality surveillance results; Alyeska trending reports; and regulatory agency compliance inspections. This CMP report draws upon recent pertinent data, findings and observations from many sources to make conclusions.

Chapter 2. Significant TAPS Environmental Protection Issues

Summary

For each of the significant TAPS environmental protection issues discussed in this chapter, Alyeska's recent performance is summarized. Conclusions about the compliance and effectiveness of Alyeska's TAPS environmental protection program are made.

The JPO concludes that Alyeska's environmental program is generally in compliance with grant and lease environmental stipulations, regulations, and permit conditions. Much of Alyeska's environmental program is effective in minimizing risk to the environment. Important examples of effective program components include Alyeska environmental audits and surveillances, and the Field Environmental Generalists. Opportunities to improve the environmental program exist.

Grant and Lease Compliance

- **Alyeska is in compliance with environmental stipulations of the grant and lease, based on 1997 performance.**

Compliance with stipulations in the Federal Agreement and Grant of Right-of-Way and the State Right-of-Way Lease continues to be a JPO focus. Thirty assessments and surveillances conducted by JPO during 1997 were reviewed to determine if Alyeska is in compliance with environmental stipulations of the grant and lease. There was substantial documentation for these stipulations: Environmental Briefing; Sanitation and Waste Disposal; Erosion Control; Fish and Wildlife Protection; Restoration; and Contingency Plans.

Unsatisfactory conditions involved Hazardous Materials Management Plans (Stipulation 2.2.6); low water crossings (Stipulation 2.5); and erosion control (Stipulation 2.4). Nineteen unsatifactory conditions were identified during observation and recording of approximately 450 attributes during thirty JPO assessments and surveillances. This means that Alyeska was out of compliance with about 4% of the attributes derived from environmental stipulations sampled.

Ten of the nineteen unsatisfactory conditions involved agency permit stipulations. These included an NPDES permit violation, a Notice of Disposal violation, condition of low water crossings, stream bank erosion, hazardous waste storage, and hazardous waste storage site containment. Nine of the nineteen unsatisfactory conditions involved situations where Alyeska did not follow their own procedures. These conditions included implementing hazardous material management plans for project sites, environmental briefing requirements, and erosion control on the workpad.

JPO evaluated the nineteen unsatisfactory conditions documented during 1997 surveillances by using Alyeska's risk level definition and policy found in their corporate Safety Manual. This risk level definition was previously approved by JPO. By using this method, JPO determined that even

though 4% of the environmental stipulation attributes were unsatisfactory, Alyeska is in compliance with the grant and lease to the extent of this sample.

Compliance with Regulatory Requirements

- **Alyeska is in compliance with most environmental laws and regulations. Several non-compliance issues identified by agencies were unresolved during the period covered by this report.**

Three regulatory agencies conducted compliance inspections along the pipeline and at the Valdez Marine Terminal which documented twenty three permit or regulatory violations. During the period covered by this report, twelve of these violations were satisfactorily resolved by Alyeska while eleven were unresolved.

JPO did two assessments that evaluated Alyeska's compliance with environmental laws and regulations based on U.S. Environmental Protection Agency (EPA) and Alaska Department of Environmental Conservation (ADEC) compliance inspection reports. Additionally, JPO searched Alaska Department of Fish and Game (ADF&G) files from 1995 through 1997 to determine if there were any enforcement actions against Alyeska.

JPO reviewed six inspections conducted by EPA at the Valdez Marine Terminal in 1996 and 1997. The inspections covered compliance with the Federal Insecticide Fungicide Rodenticide Act (FIFRA), the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), the Clean Air Act, and the National Pollution Discharge Elimination System (NPDES). The inspections revealed one FIFRA and two RCRA violations. All were considered by EPA to be minor.

JPO also reviewed eleven ADEC 1996 and 1997 reports for inspections along the pipeline and at the Valdez Marine Terminal. One of the inspections covered three solid waste disposal sites. One of the sites (SWDS 117-1B) was not in compliance with ADEC permit requirements. ADEC conducted ten inspections to evaluate Air Quality Permit compliance at nine pump stations and the Valdez Marine Terminal. Of the nineteen permit violations identified by ADEC, eleven were unresolved during the period of this report. Of the eleven unresolved violations, ten were related to crude oil storage tank venting at the Valdez Marine Terminal. These may be resolved when the vapor recovery system comes on-line. The other unresolved issue is that surface water collects in the active disposal cell of a solid waste disposal site.

ADF&G issued one Notice of Violation (NOV) to Alyeska in 1996 for work conducted at the Little Salcha River without a Fish Habitat Permit. Alyeska reported the violation to ADF&G which was discovered as part of routine monitoring by an Alyeska Field Environmental Generalist. The violation was considered minor by ADF&G. ADF&G decided to use the situation as an opportunity to evaluate actions which might prevent a more significant violation. In response to the NOV, Alyeska prepared an Incident Investigation Report that identified the root causes of the violation.

The report made six recommendations which Alyeska implemented to prevent future violations.

JPO obtained copies of Alyeska's "Performance Contract Compliance Incidents Report" for 1996 and 1997. These reports detail the number of incidents resulting in reportable permit exceedances, enforcement actions, and notices of violation. The total number of compliance incidents in 1997 was 64, down from 81 incidents in 1996. The majority of incidents relate to air quality opacity and miscellaneous air emissions from tank venting. Other categories with multiple incidents include domestic wastewater, ballast water emissions, sampling procedures, non-reporting of violations, and RCRA.

Oil Spill Prevention, Preparedness and Response

Alyeska has implemented an adequate oil spill prevention, preparedness and response program. Maintaining an adequate program while making organizational and operational changes in the company will require continued diligence by both JPO and Alyeska.

The Oil Spill Contingency Plans - Oil spill contingency plans (C-plans) are required by the grant, lease, and Federal and State laws. There are separate C-plans for the Valdez Marine Terminal and the pipeline. The range of issues covered by each C-plan includes spill prevention, preparedness, and response requirements. C-plans are reviewed by State and Federal agencies every three to five years. The lease and grant require that BLM and ADNR review the C-plans annually.

The Valdez Marine Terminal C-plan was conditionally approved by JPO agencies in January 1997. The eleven conditions of approval for the terminal C-plan include a range of requirements such as further planning for shoreline protection in Port Valdez and maintenance of secondary containment structures around the terminal crude oil storage tanks. The approval conditions are expected to be resolved in 1998.

A revised pipeline C-plan has been submitted by Alyeska but is not yet approved. Until the revised plan is approved, Alyeska is operating under an extended approval for the current plan. The revisions to the plan involve format, new sections to address best available technology regulations, and changes related to the reduction in the number of pump stations. JPO found that the revision submitted by Alyeska contained insufficient information in a number of areas. JPO concerns include the effects of closed pump stations (ramp down effects) on reconnaissance and response, training related to protection of worker health and safety, use of response action contractors, and initial response capability. An opportunity for public comment is part of the C-plan review process. The C-plan review will include consideration of issues raised by an Alyeska employee in a master's thesis, which highlighted concerns about training and plan maintenance to reflect changing conditions along the pipeline.

Alyeska Oil Spill Response Capability - A report prepared by JPO in December 1997 reviewed

Alyeska oil spill response capability by analyzing experiences from recent pipeline oil spill incidents and drills. JPO also conducted oil spill equipment inventories in 1997. Together, these results provide a current assessment of Alyeska oil spill response capability.

There have been two events that demonstrated Alyeska's ability to implement parts of the pipeline C-plan in the past two years. The first was the April 1996 oil spill at check valve 92 and the second was a suspected oil spill near Thompson Pass in November 1996. At check valve 92, 33,000 gallons of oil leaked. There was no release of oil at Thompson Pass. Both incidents involved below ground pipe without oil reaching surface waters or vegetation.

JPO prepared assessments of both Alyeska incident responses and found that Alyeska has demonstrated the ability to implement an effective response using the Incident Command System. This is consistent with the Alaska State/Federal Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases, also known as the Unified Plan. However, the current pipeline C-plan has little information relevant to investigation and response to a subsurface spill. The C-plan should be updated to ensure preparedness to respond to a subsurface spill. Alyeska's Valdez personnel who have been oriented toward marine spill response should receive additional training for pipeline response.

Other elements of Alyeska's response capabilities have been tested in oil spill drills. JPO called or participated in a drill on the Yukon River in October 1997, an equipment deployment drill for the Thompson Pass area in May 1997, and a "call-up" drill at Glennallen in December 1996. The Yukon River drill objectives were to establish an initial response organization, activate the Fairbanks Emergency Operations Center, develop a response action plan to address the first 8 hours of a drill, mobilize response personnel and equipment according to the response action plan, mobilize responders from Rampart and Stevens Village, and identify tactics, equipment, material and personnel to address leak through at remote gate valve 60. The equipment deployment drill at Thompson Pass was designed to test Alyeska's ability to deploy oil spill response equipment and the integration of SERVS and pipeline responders. The "call-up" drill tested whether additional personnel with requisite training would be available to support a response in the second 24 hours of an incident and beyond.

Alyeska performance at the drills was adequate. However, JPO observed several deficiencies in Alyeska's preparedness and response. These deficiencies were depth and completeness of incident command system training for command staff in Fairbanks, outdated agency notification lists, high communication demands from Fairbanks to the field which constrained an adequate field response, and the need to provide SERVS responders more training for pipeline response. The "call up" drill was successful at contacting and confirming the availability of over 900 people. A particularly important JPO observation which was evident at all drills and incidents is that experienced and trained Alyeska field personnel are needed to lead and direct field crews for an effective and efficient oil spill response.

The JPO also conducted a number of oil spill equipment inventories. As with most inventories done

over the past years there were no serious discrepancies. Required equipment was present, available, and functional.

Evaluation and Trending of TAPS Oil Spill Reports - The JPO has records of spill reports filed by Alyeska from 1970 to 1996. There are 5,690 spill report entries in the JPO database. The total volume reported is 45 million gallons, of which over 30 million gallons are ballast water spilled at sea and the Valdez Marine Terminal. JPO reviewed these records to determine substances most frequently spilled, proportion of spills since construction, and spill size, frequency and causes.

Since TAPS began operations, the majority of spills have been substances other than crude oil. Ballast water, diesel fuel, turbine fuel, hydraulic fluid and antifreeze account for 97% of all spilled fluids. The majority of spills reported (4,550) occurred during construction activities from 1970 to 1977. Most of these were small spills totaling 2.3 million gallons.

The total volume of crude oil spills along the pipeline is just under 4 million gallons. Since startup, 90% of crude oil spills have been at locations along the pipeline. From 1977 to 1996, there were 99 crude oil spills along the pipeline that spilled between one and 55 gallons. Half of the spills occurred at pump stations. Twenty spills occurred at mainline valves and ten at other pipeline locations. The remainder were from tank farms and miscellaneous locations. The terminal had approximately 200 crude oil spills.

Eight major spills exceeding 10,000 gallons of crude oil occurred. Of these, seven occurred during the first three years of pipeline operation. Since 1981, only one spill exceeding 10,000 gallons occurred. In April 1996, a spill of approximately 33,000 gallons of crude oil was discovered at check valve 92. The total amount of crude oil spilled during pipeline and terminal operations is close to 1.2 million gallons of crude oil, from 300 spills.

Evaluation of the TAPS oil spill record does not reveal any major trend which enables prediction of future spills. The obvious trend is that there was more oil spilled during the early operations of the pipeline, followed by a long period of operation relatively free from very large spills. The number of TAPS spills has declined in recent years. Increased emphasis on spill prevention and protection in 1993 and 1994 and tightening of fuel transfer procedures has resulted in a reduction of small spills. Changes in reporting procedures for spills under a gallon have also reduced the number of reported spills.

Overall, given the large of amount of crude oil transported, the amount spilled from the pipeline and terminal is relatively small. There will continue to be many small spills associated with pipeline and terminal operations and maintenance. However, there remains a small probability of larger spills.

Reorganization Impacts - JPO expressed concerns about increasing fragmentation and possible disinvestment in the TAPS oil spill preparedness and prevention program as a result of the reorganization in a December 1997 letter to Alyeska. There has been a loss of at least three positions with oil spill preparedness and prevention responsibilities. The recent changes in the Alyeska

organization have moved spill planning responsibilities out of pipeline operations, and divided the responsibility for C-plan renewal and C-plan management. The pipeline C-plan specialist position reports to the regulatory compliance section in the Valdez Business Unit. The connection between pipeline field operations and C-plan maintenance and administration is unclear. Responsibility for the pipeline C-plan has moved from pipeline operations, where it is actually implemented, to Valdez-based SERVS personnel, with limited pipeline expertise.

Past Audits Revisited

- **Corrective and preventive actions resulting from past audit findings related to the TAPS Environmental Protection Program are in place and effective.**

Eight audits of Alyeska and TAPS conducted in 1993-94 resulted in 4920 findings. A total of six priority one (P1) and over 400 lesser findings focused on environmental issues. Alyeska implemented corrective and preventive actions for all of the findings assigned to the Environment Department. All findings were closed by January 1997.

The JPO sampled these audit findings to determine how effective corrective and preventive actions were in preventing similar problems from occurring in the ongoing operation of the pipeline. JPO reviewed the six P1 findings and a small, diverse sample of previously verified findings of lower priority level were reexamined as part of JPO assessment JPO-97-A-001. Specific topics examined were: disposition of HAZOP findings; monitoring of tanker emissions from loading operations at Valdez Marine Terminal; monitoring of crude storage tank emissions; amendments to the VMT Oil Discharge Prevention and Contingency Plan; waste storage facilities at pump stations; procedures for high volatile gas liquids control at Pump Station 1; waste water disposal at pump stations; ADEC authorization of solid waste contractors; hazardous material training at pump stations; environmental incident reporting pipeline system wide; and contractor compliance with Alyeska's environmental protection manual.

The JPO assessment concluded that Alyeska had implemented and successfully continued programmatic changes with respect to environmental audit findings.

Employee Concern Programs and Environmental Protection

JPO and Alyeska employee concern programs have benefitted TAPS environmental protection. Approximately 12.5% of the environmental concerns were validated by JPO or Alyeska and resulted in corrective action by Alyeska.

Alyeska or contractor employees with concerns related to TAPS can contact two separate programs for assistance in resolving issues. These programs are Alyeska's Employee Concerns Program and the JPO Concerns Resolution Program. The JPO program assists employees who don't feel

comfortable using the Alyeska process. Both of these programs were sampled for concerns related to environmental protection.

A total of 16 concerns raised by employees relative to environmental issues were processed between January 1995 and December 1997. Two concerns were validated and issues raised required corrective action by Alyeska. Validated concerns were received on the Valdez Marine Terminal vapor recovery project, and on chemical transport by tanker trailer. These resulted in corrective action, including modification of existing procedures.

Nine concerns were received and processed through the JPO Concerns Resolution Program. The remaining seven concerns were processed through the Alyeska Employee Concerns Program. Concerns received by either program are investigated in a similar fashion. Eleven concerns have been closed.

Seven concerns identified potential degradation in the oil spill response capability of Alyeska and security of the pipeline. Closing pump stations, reduction of personnel associated with oil spill response, and speculation on the ability of Alyeska to meet commitments under the Oil Spill Contingency Plan were reported. The concerns could not be substantiated because no oil spill had occurred. However, these concerns reinforced JPO's review of oil spill contingency plans and procedures.

Three concerns were related to leaking pipes, potential health problems, and the vapor recovery project at the Valdez Marine Terminal. As a result of a study conducted by Alyeska, no risks to public health due to emissions were validated. However, leaking pipes were evident. Alyeska is replacing piping and building a vapor recovery system to meet new EPA and industry standards. As a result of the concerns, existing guidelines and Alyeska policies and procedures were reviewed and in some instances modified.

One concern involved the unsafe use of tanker trailers to transport chemicals. This concern was validated. However, the issue had already been addressed and corrective action had been implemented prior to the concern being raised.

Five concerns are currently under investigation; two through the JPO Concerns Resolution Program and three through the Alyeska Employee Concerns Program. Four concerns are related to Alyeska's oil spill response capabilities and one alleges a violation of pipeline maintenance procedures. JPO will monitor Alyeska's Employee Concerns Program investigations to determine whether employee concerns are validated and to review corrective actions.

Alyeska Environmental Policy

The effectiveness of Alyeska's environmental policy, which communicates the corporate commitment to environmental protection to all Alyeska

employees and contractors, could be increased by clearly stating it in a high level document signed by Alyeska's top management.

An environmental policy which reflects the commitment of Alyeska's top management to protect environmental values, comply with laws and regulations, prevent pollution, and continually improve environmental performance is an important component of Alyeska's overall effort to protect the environment. To be effective, the environmental policy must be communicated to all Alyeska and contractor employees so that they have a clear understanding of corporate expectations.

Alyeska's Corporate Environmental Policy (contained in the Environmental Protection Manual or EN-43) states: "Alyeska and its owner companies will comply with all applicable environmental stipulations and requirements and will minimize environmental changes which could adversely affect health and safety; air and water quality; fish, wildlife, and their habitats; and cultural resources." The Environment Department is the "owner" of EN-43. Alyeska's Quality Program and the Alyeska Integrity Management System (AIMS) contain references to environmental protection, compliance with laws and regulations and continual improvement.

Previously Alyeska championed "long life goals" for TAPS, which included a corporate commitment to be "environmentally responsible." Currently Alyeska has declared a new corporate goal of "Operational Excellence" by the year 2000. The "Operational Excellence" goal includes five strategic elements. There is no reference to the importance of environmental values and protection in the TAPS "Operational Excellence" goal.

JPO has no doubt that Alyeska's top management is committed to environmental protection. However, JPO believes that it would be beneficial for Alyeska's environmental policy to be specifically stated in a high level Alyeska document or manual signed by top management. The environmental policy should be clearly communicated to all Alyeska employees and contractors. If Alyeska's top management clearly emphasizes the importance of environmental protection, then lower level Alyeska and contractor employees are more likely to take a corporate commitment to environmental protection seriously.

The danger of not clearly communicating the corporate environmental policy is that some Alyeska employees and contractors may perceive a lessening of the importance of environmental protection on TAPS. The result may be subtle and could be felt as decisions are made at all levels of Alyeska. If employees perceive that environmental protection is not as important as other factors, environmental values could receive lower priority and attention.

Alyeska Environmental Audits and Environmental Surveillances

- **Alyeska has implemented an effective program of environmental audits and environmental surveillances. However, opportunities for improvement exist.**

Alyeska Environmental Audits Reviewed by JPO - JPO conducted an assessment (JPO-97-A-002) of Alyeska environmental audits to evaluate Alyeska's performance in three specific areas. First, to determine whether findings identified by Alyeska's General Audits Group were followed to closure. Second, to determine whether information gathered during Alyeska environmental audits was used to make changes in policy and procedures to ensure compliance with environmental stipulations of the TAPS lease and grant. Third, to determine whether violations of stipulations or regulations discovered during environmental audits were reported to appropriate State or Federal agencies.

Six audits conducted by the General Audits Group containing 31 findings were reviewed by JPO to determine whether findings were followed to closure. All of the findings were closed according to Alyeska procedures.

The JPO found that Alyeska changed internal procedures as a result of findings contained in three environmental audits. In one audit, repeat findings were made, and the Corrective Action Request process was used to implement procedural changes on a system wide basis.

JPO found that Alyeska auditors identified at least eight situations where regulatory agencies were not properly notified of regulatory violations by the audited organization. Verbal notifications were implied, but could not be verified by Alyeska auditors because there was no documentation by the audited organizations.

Alyeska's Pipeline Multimedia Audit (97-A01) resulted in eight findings and three observations. Of the findings, two repeated earlier audit findings for the pipeline and one was also found during a similar multimedia audit conducted at the Valdez Marine Terminal. One of the findings was also a TAPS Audit finding (51486 PS 4-3-4-2) related to drinking water sampling.

The JPO Assessment and Alyeska's Pipeline Multimedia Audit indicate that Alyeska has a quality program in place which identifies environmental issues. Alyeska uses multi-disciplinary teams to conduct environmental audits. Corrective actions resulting from audit findings are used to implement changes in procedures. Alyeska tracks environmental audit findings to closure.

Alyeska Environment Department Contractor Program and Performance Review - Alyeska's Environmental Protection Manual (EN-43, Section 9.6) requires contractor environmental programs and work site evaluations on a regular basis. JPO completed a surveillance of the Alyeska Environment Department contractor compliance program (JPO-97-S-093) which reviewed the internal evaluation procedure in EN-43. This issue was the subject of a TAPS Audit finding (TAPS 901 VT-13-7; CAP00012). Alyeska conducted contractor program evaluations or work site surveillances for Arctic Slope Inspection Services (ASIS), Chugach North Technical Services, Alaska Petroleum Contractors, Price/Ahtna, and others. Findings from Environment Department surveillances were taken to Alyeska contract stewards for resolution. There was one instance of an unacceptable contractor program identified by Alyeska in June 1996 for ASIS. Alyeska was unable to document that any follow-up or corrective action was undertaken. However, ASIS was replaced

by another contractor in early 1997. The JPO concludes that the Environment Department has conducted contractor environmental program evaluations as required in EN-43. The evaluations documented problems identified.

Alyeska Field Environmental Generalist Surveillances - Alyeska Field Environmental Generalists (FEGs) perform environmental surveillances. Alyeska's Environmental Protection Manual provides guidance and procedures for FEG bi-annual environmental surveillances, reporting, and record keeping. Problem areas are either corrected-on-the spot and documented on surveillance checklists or they are documented on Environment Department corrective action forms. These forms are sent to the responsible person in the field who has 45 days to respond. Closure is verified by FEGs and documented in their daily activity logs. These formal findings are included in trend analysis reports. Additionally, FEGs conduct routine environmental monitoring during the remainder of the year which is informally documented in daily activity logs. These processes are similar to but not identical to the quality surveillance process found in Alyeska's Quality Program Manual. These informal findings are not included in trend analysis reports.

JPO reviewed the standardized checklist used by FEGs during bi-annual surveillances of the pipeline and terminal. The checklist, which is 45 pages in length and contains over 200 attributes, adequately follows requirements identified in EN-43. Six checklists were reviewed and found to adequately document whether attributes were potential environmental or non-compliance issues. JPO also checked three FEG bi-annual surveillance checklists to determine if two situations reported in agency permit compliance inspections as "out of compliance" were detected. One situation was detected and the other was not detected in two separate surveillances conducted during the relevant period.

An environmental surveillance checklist completed by an FEG in June 1996 noted standing water in the active cells of a TAPS solid waste disposal site (SWDS 117-1B). This is a violation of the ADEC permit to operate the site. A corrective action for this finding was not written by the FEG until October 1996. In the meantime, ADEC inspected the site in July 1996, and advised Alyeska of the non-compliance situation in a letter dated October 28, 1996. Alyeska requested a waiver of the permit condition. While the FEG environmental surveillance detected the non-compliance situation, follow-up action was not initiated in a timely manner. This issue is still unresolved because Alyeska and ADEC have not reached agreement on a solution.

At the Valdez Marine Terminal, inspections by ADEC in December 1996 found Alyeska out of compliance with several Air Quality Control Permit conditions. In one instance, a repeat occurrence of a noncompliance related to a vent seal leak detected by ADEC in 1995 was noted. JPO reviewed two Alyeska environmental surveillance checklists which should have documented the leaking vent seal condition. Checklists dated June 25 and December 23, 1996 did not refer to a non-compliance condition, or mention a leaking seal alleged by Alyeska to be the cause of the condition. Based on our review the JPO has two observations. First, the Environment Department surveillance did not detect the non-compliance condition, possibly because the checklist either missed a condition of the ADEC permit, or because it is too general to ensure complete coverage. Second, there is no record of a corrective action, even though the non-compliance condition dates back to a 1995 ADEC

inspection. Alyeska and ADEC are currently negotiating a resolution of the non-compliance condition.

The JPO concludes that formal Environmental Surveillances (and informal, routine monitoring work) conducted by FEGs usually detect and document environmental concerns. Results of formal and informal Environmental Surveillances, along with adequate and timely follow-up of issues, are critical to the protection of environmental values along TAPS and to regulatory compliance. Alyeska needs to assure that corrective action is implemented in a timely manner. Alyeska should evaluate the formal and informal environmental surveillance processes to determine if they should be more closely aligned with the quality surveillance process found in Alyeska's Quality Program Manual. This closer alignment may help to assure that issues and corrective and preventive actions are adequately documented and that data is available for trend analysis reports.

Alliance Contractor Field Environmental Generalists - Alaska Petroleum Contractors (APC), an Alyeska Alliance Contractor, has two FEGs on staff concurrent with Alyeska FEGs for the northern area (Pump Stations 1-4) of the pipeline. JPO discussions with these personnel and a review of their position description, indicate their job responsibilities are very similar to those of the Alyeska FEGs. However, the APC FEGs do not directly correspond with regulators, and they do not produce written surveillance reports. The APC FEGs act as Alyeska's environment representative in some matters, such as giving environmental briefings written by Alyeska personnel. They also provide assistance to APC in preparing Hazardous Materials Management Plans and for project approvals recommended by the Environment Department. It appears that the APC FEGs provide primary support to APC operations personnel in a manner similar to the Alyeska FEGs, but in a less structured manner without documentation.

Other Alliance Contractors do not have FEGs. Although not documented, the ADF&G experience with APC field environmental personnel has been very positive. APC FEGs coordinate issues and concerns closely with the JPO/ADF&G Liaison and they provide frequent project updates. The ADF&G believes that APC's environmental personnel have resulted in increased environmental awareness and environmental protection on the northern portion of the pipeline. In addition, Alyeska environmental staff report that Price/Ahtna has a seasonal FEG at the Terminal to oversee major projects. They report that Price/Ahtna's FEG has been instrumental in identifying and preventing environmental risks on projects, and in training contractor personnel on environmental responsibilities. Alyeska should consider requiring other Alliance Contractors to hire field environmental personnel for the southern portion of the pipeline. Alliance Contractor FEGs should have a standard of expertise similar to Alyeska FEGs and they should be required to document their work in a similar manner.

Alyeska Trending Efforts - Alyeska Quality Program Manual (QA-36), Principle Implementing Procedure 16.3, provides the procedure and responsibilities for analyzing audit and surveillance findings, corrective action requests (CARs), and non-conformance reports (NCRs) to provide Alyeska management with Trend Analysis Reports. The Continuous Improvement and Quality Team is responsible for producing Trend Analysis Reports which include both quality and

environmental surveillance findings.

Quarterly Trend Analysis Reports were reviewed for five periods from first quarter 1995 to the second quarter 1997. Two of the five reports included environmental surveillance information. There were no clear trends related to environmental issues which were evident during the period sampled. Topics represented included spill prevention and countermeasures issues, documentation issues related to EN-43, and air quality equipment maintenance issues.

An Alyeska Environmental Systems Overview Audit (96-A16) categorized and ranked data from environmental surveillances, corrective action requests, causal factor analyses, audit findings, environmental performance measures, and performance contract compliance incidents. Areas shown to require further scrutiny by Alyeska environmental auditors were: documentation; training; handling, storage and disposal of hazardous waste; air quality opacity exceedances; potable water sampling and exceedances; spill prevention training; and spill reporting.

Alyeska should continue to include environmental surveillance information in quarterly and annual trend analysis reports. Alyeska should assure that both formally documented environmental surveillance findings and other environmental issues discovered by FEGs but which are not formally documented as part of the environmental surveillance process are included in trend analysis reports.

High Risk TAPS Activities

Alyeska conducted major maintenance projects in a manner that minimized risk to the environment.

Alyeska's record of performance in protecting the environment during high risk TAPS activities is of particular interest to JPO. Alyeska's record of performance provides an opportunity to directly measure commitment and ability to protect the environment. High risk TAPS activities are construction or major maintenance projects, or changes in operations which may increase the chance of directly damaging the pipeline or facilities (which could result in environmental damage) or of directly damaging the environment. JPO reviewed five 1997 TAPS projects or events. These are: Thompson Pass mainline pipe investigation; check valve 5 excavation; Wilbur Creek corrosion investigation; VMT vapor recovery and vapor control project; and the August 1997 pipeline shutdown and start-up. All of these projects were subjects of JPO surveillances or assessments.

The Thompson Pass mainline pipe investigation conducted during Summer 1997, was completed with no findings written by JPO. The pipeline at milepost 775 was excavated and deformations were examined to determine their effect on pipeline integrity. During this project, Alyeska and contractors performed well in providing environmental briefings to all personnel on the project. Staged oil spill response equipment and custom containment sites were planned in advance for this project. Erosion control measures on the steep slopes in the project area included additional water bar installation in response to changing needs. Alyeska performance with respect to environmental protection was well

planned and executed.

An excavation of check valve 5 at milepost 18 was conducted in late 1997 as part of a larger TAPS buried valve investigation program. JPO project surveillances documented four unsatisfactory conditions. Unsatisfactory conditions included a "seeping" buried check valve, an inadequately documented environmental briefing, late "notification of disposal" to the Alaska Department of Environmental Conservation of waste water or dewatering effluent, and dewatering of effluent with a hydrocarbon sheen onto the tundra, which is a violation of State law. According to ADEC, the hydrocarbon sheen was slight and resulted in no damage to the environment.

The Wilbur Creek corrosion investigation was conducted in early 1997. Excavation at the site was complicated by steep slopes and deep burial mode of the pipeline. JPO found no unsatisfactory conditions. One observation in the JPO assessment was that CTI, the new Alyeska inspection contractor which began their contract in the middle of the project, did not have documented project environmental briefings. Post project surveillance documented that erosion control and seeding had been accomplished by June 1997.

Two pipeline shutdown and start-up events took place in August 1997. Both shutdowns were scheduled for rampdown reconfiguration of two pump stations, valve testing, and maintenance. The JPO assessment for these events cited seven findings, none of which were related to environmental protection. There were no environmental consequences associated with any of the findings.

Vapor recovery projects at VMT will bring Alyeska into compliance with new EPA marine tank loading regulations which require capture of vapors from tankers taking on crude. Six findings resulted during the JPO assessment. The assessment states that environmental briefings were either lacking or undocumented for project personnel. CTI was one contractor which was not briefed.

In summary, five TAPS projects or events were reviewed by JPO. Two violations of agency permits occurred on the check valve 5 project. Alyeska procedures contained in EN-43 were not followed by a contractor on the vapor recovery and Wilber Creek projects. These discrepancies are significant. However, when considered in the context of the scope and scale of large projects, the JPO concludes that Alyeska conducts major projects in a manner which protects the environment. This is largely the result of a "project mentality" whereby Alyeska plans and executes major projects in a satisfactory manner with a high degree of oversight. Major projects are overseen by government regulators and Alyeska's internal quality control, quality assurance, safety and environmental personnel. Alyeska's TAPS Alliance Engineering Execution Manual (PM-2001) specifies in Section 7.4.2 that a project close out meeting to discuss lessons learned is required. This specifies that the project manager/project team review and make recommendations for future projects such that: "All aspects of the project are to be examined for "lessons learned" such as; quality, safety, cost, schedule, and work processes." It is recommended that PM-2001 and EN-43 address Environment Department participation in the project close out. Protection of the environment should be considered an important aspect of all projects.

Chapter 3. Potential Risks of Reorganization

Summary

This chapter identifies potential risks to the environment posed by Alyeska's reorganization. The new Alyeska environmental organization is not expected to be fully in place until mid-1998. JPO will assess whether consequences associated with the potential risks actually occur beginning in late 1998. JPO will use indirect evidence to measure and evaluate the consequences including: regulatory violations; employee concerns; JPO and Alyeska environmental and quality surveillance and audit findings; and interviews with Alyeska and contractor staff about their perceptions of TAPS environmental protection.

The Alyeska Environment Department as it existed in 1997 is the baseline from which JPO will judge Alyeska's performance in environmental protection. Most concerns about increased risk to the environment resulting from Alyeska's reorganization fall into two categories, staffing and budget levels, and Environment Department structure and responsibility.

Staffing and Budget Levels

Lower staffing and budget levels in Alyeska's Environment Department could result in increased risk of environmental damage and regulatory non-compliance.

Resources essential to a successful TAPS environmental protection program include people with specialized skills and training, technology and funding.

The total number of Alyeska employees with environmental responsibilities will decline from 29.5 to 17.5 as a result of the reorganization. A 40% decrease in employees with environmental responsibilities could mean a risk of less environmental protection and increased regulatory non-compliance. However, it may be that prior to the reorganization, the Environment Department was too big, or that new procedures could be implemented that would allow Alyeska's environmental program to operate more efficiently. Rampdown of pump stations could also decrease environmental staff workload.

As a result of the reorganization, Subject Matter Experts (SMEs) will spend more time on project management and less on day-to-day resolution of environmental issues. A primary responsibility of the SMEs will be to oversee contractors who will do much of the work formerly done by Alyeska SMEs. This change in SME responsibilities and increased reliance on contractors could result in increased regulatory noncompliances and risk to the environment. Potential risks relate to: lower levels of contractor expertise; inconsistencies between contractors; conflict between contractor profit motives and environmental protection; and less contractor authority to adopt increased environmental protection measures which go beyond strict regulatory compliance. The

responsibilities for Field Environmental Generalists (FEGs) are not expected to change.

The TAPS environmental protection budget is slightly less than 1% of the total TAPS operations and maintenance budget. Alyeska's overall budget to operate and maintain TAPS, including the environmental budget, is declining as through-put drops. This declining budget could result in increased risk to the environment. As Alyeska's budget declines, the focus will be on regulatory compliance. Other voluntary actions related to environmental protection may no longer be undertaken. Examples of Alyeska's voluntary actions include the historical contaminated site rating program, the Environmental Awareness Program, fish stream surveys, and fish habitat enhancement not required by permits. Additionally, Alyeska initiatives related to continuous improvement of the TAPS environmental protection program may be delayed or canceled.

Environment Department Structure and Responsibility

Changes in the structure and responsibility of the Environment Department could increase risk to the environment because fragmentation of environmental responsibilities could occur or because TAPS employees and contractors perceive that environmental protection is no longer a priority.

Prior to the reorganization, the Alyeska Environment Department manager was part of the Alyeska leadership team. The reorganization resulted in the Environment Team Leader reporting to the Support Team Lead, who in turn reports to the Vice President for the Fairbanks Business Unit. The Environment Team Lead is no longer part of the leadership team. This change may result in less consideration of environmental concerns when making decisions at the corporate level because there will be no one person whose sole responsibility is to represent environmental protection. This change may also result in a perception by Alyeska employees and contractors that environmental protection is not as important.

Fragmentation of environmental responsibilities and functions between the Fairbanks and Valdez business units could result in inconsistencies in environmental procedures. Appropriate roles, responsibilities and authorities must be clearly defined for the new "stewardship concept" so that company wide consistency is maintained and commitments are met.

Chapter 4. Future JPO Oversight Activities

This JPO report on Alyeska's TAPS environmental protection program is based on review of numerous sources of information on recent Alyeska environmental performance. JPO has drawn favorable conclusions about Alyeska's protection of the environment along TAPS. Environmental protection issues identified in this report will be the focus of future JPO oversight activities. In general, these are areas where JPO has identified opportunities for improvement in Alyeska's environmental performance.

Future JPO oversight activities related to Alyeska's environmental protection program include:

Environmental Stipulation Compliance - JPO will continue to evaluate compliance with environmental stipulations of the grant and lease, and will focus on those stipulations not fully evaluated in 1997.

Reorganization Effects on TAPS Environmental Protection - JPO noted concerns related to the potential for increased risk to the environment posed by Alyeska's reorganization. In late 1998, after Alyeska completes its transition to the new organization, JPO will conduct an assessment to see if consequences associated with these potential risks occur. JPO will analyze impacts, assess root causes, and evaluate Alyeska's corrective and preventive actions. JPO's assessment will be based on audits, surveillances, and trending of results.

Oil Spill Prevention, Preparedness and Response - JPO will continue to oversee Alyeska's oil spill prevention, preparedness and response program. JPO intends to require Alyeska to update the pipeline C-plan to address response to underground crude oil leaks as a condition of approval. JPO will determine if VMT and SERVS personnel are adequately trained for a response to a pipeline oil spill.

Environmental Policy - JPO will evaluate if Alyeska's environmental program is effectively communicated to Alyeska employees and contractors.

Alyeska Contractors - Alyeska contractors must maintain the level of performance required by the grant and lease, and regulations. JPO will evaluate whether Alyeska has an effective procedure for their contractors to resolve audit and surveillance findings. JPO will evaluate whether Alyeska contractors meet training requirements for environmental compliance, including handling of hazardous waste. Alliance Contractor FEGs should have the same level of expertise as Alyeska FEGs and should be required to document their work.

Alyeska Risk Assessment - JPO will evaluate Alyeska Environment Department participation in project risk assessments and whether project risk assessments adequately consider environmental risk.

Environment Department Field Surveillance - JPO will evaluate field surveillance procedures and documentation by Alyeska FEGs to see whether they adequately identify, report, and resolve non-compliance situations. JPO will also evaluate how environmental surveillance results are trended by the Environment Department.

Lessons Learned - JPO will determine if an Environment Department representative participates in the project closeout process described in Alyeska's TAPS Alliance Engineering Execution Manual (PM 2001). JPO recommends that PM-2001 be revised to include Environment Department participation, and that section 7.4.2 be revised to include environment as an aspect of projects. Reference to Environment Department participation in the closeout process should be added to an appropriate section of the Alyeska Environmental Protection Manual.